F. J. Austin.

Hand Printing Press.

No.

Patented Oct. 8, 1836.

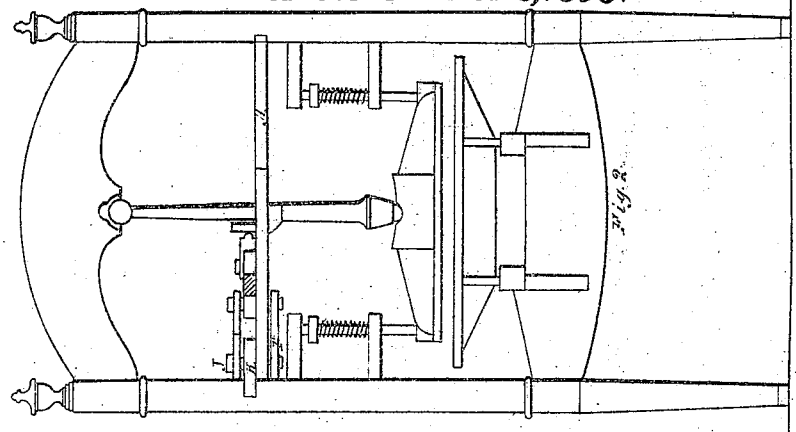


Fig. 2.

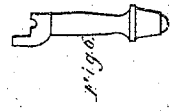


Fig. 6.

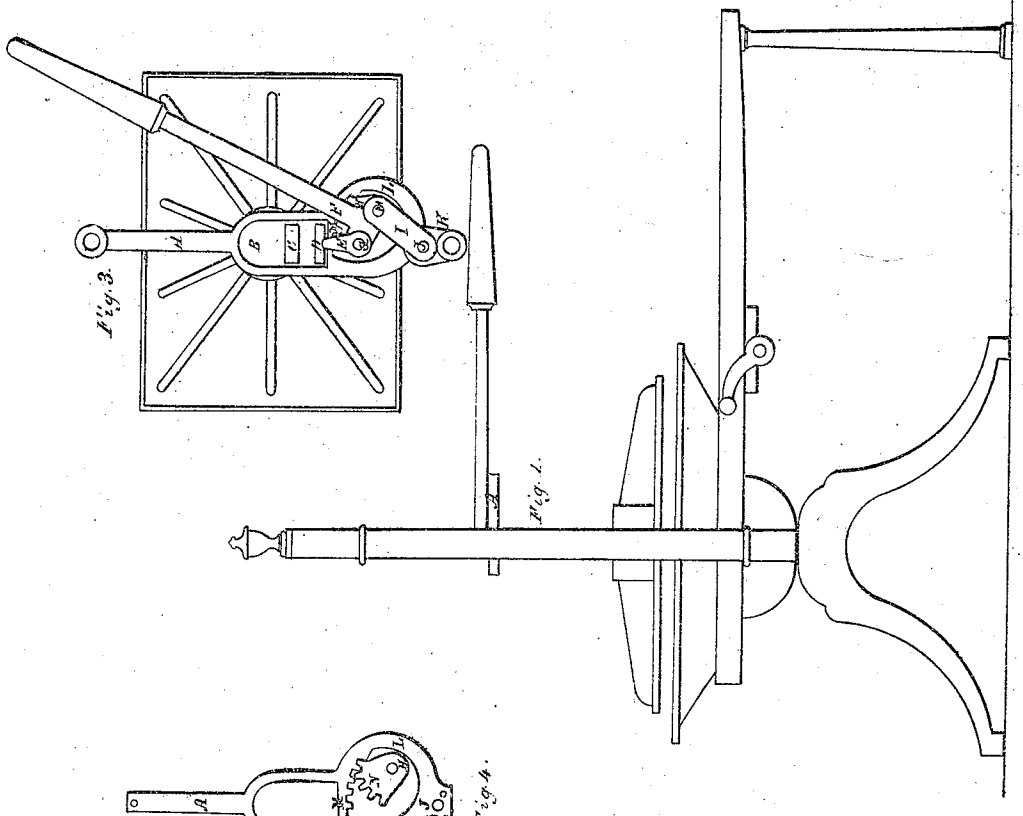


Fig. 3.

Fig. 1.

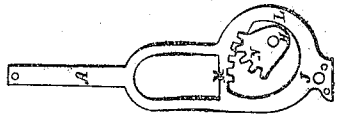
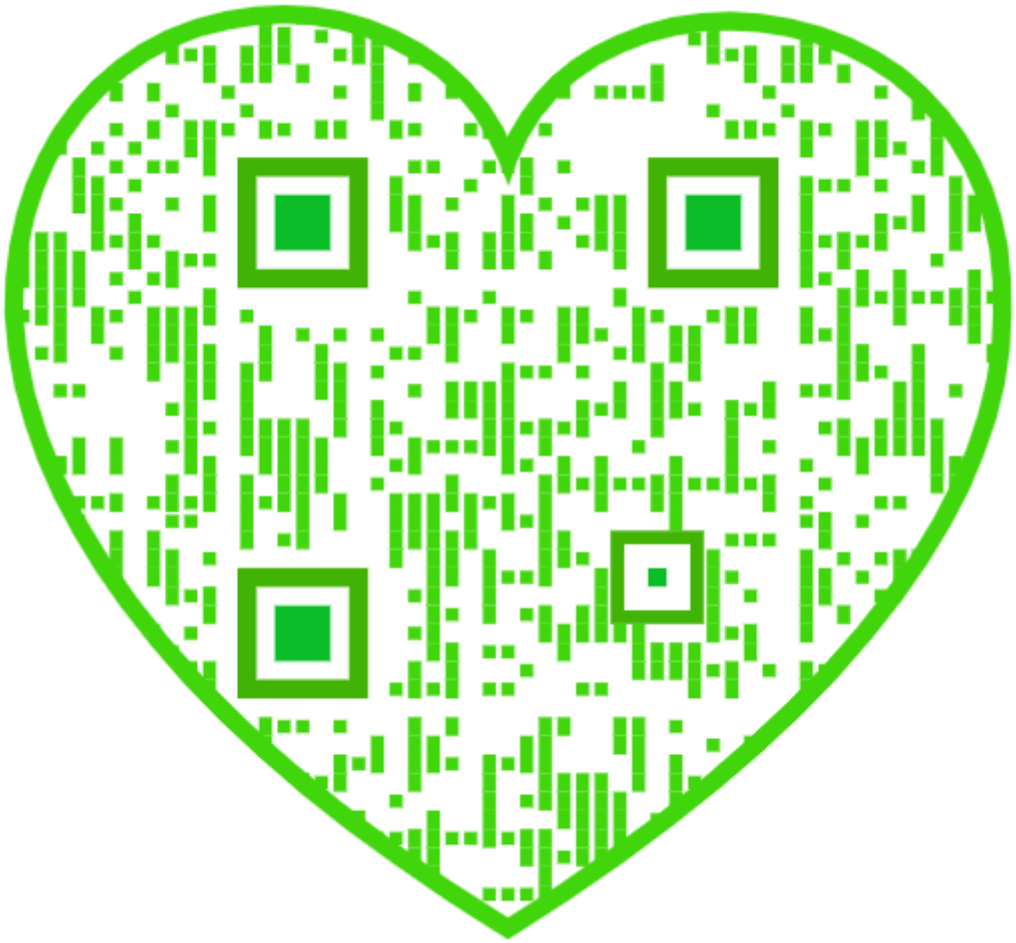


Fig. 4.



UNITED STATES PATENT OFFICE.

FREDERICK J. AUSTIN, OF NEW YORK, N. Y.

HAND PRINTING-PRESS.

Specification of Letters Patent No. 41, dated October 8, 1836.

To all whom it may concern:

Be it known that I, FREDERICK J. AUSTIN, of the city of New York, machinist, have invented a new and useful improvement in hand printing-presses by which the friction in taking an impression is lessened and the power applied in a manner more direct and efficient than heretofore; and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawings, which accompany and make a part of this specification.

The castings or other frame of this press may be made, and put together of the usual modes of the bed, the round, the platen, and other parts may also be constructed in any of the known ways that are suitable to such process, my invention relating solely to the arrangement of the apparatus by which the power of the lever is communicated to the toggle joints or knees by which the platen is moved up and down.

Figure 1, in the drawings is a side view of the press, and Fig. 2, a front view thereof. In these figures however, but little of the peculiarity of its construction is shown, this being principally represented in Figs. 3, and 4, which gives a view of the upper side of the platen, and the curvilinear piece with the toggle joints, or knees to be presently described.

In all of these figures the parts which correspond are designated by the same letters of reference.

A, Fig. 3, is an iron plate which extends across from one side or check of the press to the other where it is firmly attached.

B, is an opening through this plate within which the knees or toggle joints work.

C, is a horizontal segment of the upper segment of the joint.

D, is a piece which forms a part of the lower segment of the knee of toggle joint, being a continuation thereof upward from one side thereof so as to rise above the rule joint by which they are connected, and to receive the action of the piece E, which is jointed to the lever or arbor of the press in such a situation, and as compels it to advance by the pull in a direct or straight line, or very nearly so during its whole action, the manner in which this rises from the lower knee is shown more directly in Fig. 6, it being a detached drawing of the lower knee. The lever is so formed as to admit the joint pins G, H, to pass through it at a distance of three or four inches apart a line connecting their centers forming a right angle, or nearly so with the line of the lever. The straps I, connected to the lever by the pin H, works at its other end, on a pin J, passing also through K, a piece firmly attached to the plate A, and to the side of the press. A second strap corresponding with J, seen at J^1, Fig. 2, is placed under the lever, the same joint pin passing through both. A part of the plate A, is to serve as a fulcrum or bearing against which the lever works in such a way that its points of bearing is continually changing. Thus L, is made a curvilinear, and has within it cogs or teeth, one of which is seen at M, and into these teeth there gears a segment pinion N, securely fastened upon the lower side of the lever, thus forming the progressive fulcrum above mentioned. The position of the lever is shown in the drawing, Fig. 3, is that in which it stands when the platen is raised to its greatest height, and when forced completely down, J, H, and G, will be in a straight line, or nearly so, and by the arrangement herein shown the piece E, which acts against the toggle joint will during the whole progress of the pull move in a straight line, or nearly so, and will consequently convey the power of the lever in the act of taking an impression with less loss, than is encountered in processes made upon any of the plans heretofore known. These parts are more distinctly shown in Fig. 4, which is a detached drawing of the plate A, and the segment pinion N.

L, is a portion of the part formed curvilinear, and embraces the principle of the epicycloid in which a small circle is made to roll along the inside of a large one. The dotted lines represent one of the straps I, which retain the segment N, in its place, and by turning on the joint pins I, H, compels the teeth always to come in contact. The lever is firmly secured on the upper side of the pinion N, as shown in Fig. 3, and by moving back, and forward will cause the different teeth to engage, and thus form the progressive fulcrum before described. In this arrangement the straps I, J, and the end of the lever form a horizontal toggle joint which receives the power of the lever,

and through them it is communicated to the vertical toggle joints or knees, and thereby much increasing the power of the press.

What I claim as my invention, and wish to secure by Letters Patent is—

The particular arrangement of the part conveying the power of the lever, to the toggle joint or knees, in which a pinion is geared into teeth so as to form a progressive fulcrum for the purpose, and substantially in the manner herein set forth, not including however by this description, and claim to limit myself in the construction and arrangement of the parts precisely to the form and manner given, but to vary the same as I may think proper while the same end is attained by analogous means.

FREDERICK J. AUSTIN.

Witnesses:
GEORGE BRAID,
ROBERT GOOLE.